Fitness For Life
-Jessica Shawley

1. Narrative description of how you currently use technology in the classroom in innovative ways.

As a member of the Moscow Junior High School (MJHS) Physical Education Department, I teach physical education to 160 eighth grade students every day. Our mission is to develop each student's well being and his or her ability to make informed decisions about a healthy lifestyle. Ironically, the very computer technologies that are maximizing our capacity to turn data into information are also creating major health problems related to inactivity and obesity. According to Duke University researchers, "childhood obesity has risen to a point that can be considered a modern day epidemic."[1] For the 15.3 percent of overweight children, health risks related to obesity, such as heart disease and diabetes, will significantly reduce the quality of life, increase insurance costs, and shorten the lifespan.[2]

My students claim that physical appearance is one of their top priorities. Yet their increased weight and declining physical condition influence both their appearance and performance in all physical activities. My goal as a physical educator is to develop habits of **Fitness for Life** and to prevent my students from being part of the 65 percent of all people over the age of 20 who are already overweight or obese[3].

For the last two years, I have used pedometers (digital walking counters) with two pedometer exercise programs that I adapted to add an inventive edge in my classroom. After the pedometers are adjusted to the length of each student's stride, the students attach the pedometer to their waistbands. As they participate in class, the pedometer records the number of steps taken. The pedometer helps students begin to make a connection between their perceived exertion and the actual work recorded.

The 10,000 Steps-A-Day program is very popular and easy to present to students and parents. I teach students that approximately 2,000 steps is equivalent to one mile and that they should strive to complete 10,000 steps, or 5 miles, per day. The students and I brainstorm ways to fit exercise into our busy schedules. Walking to school, taking the stairs, walking to a friend's house, and playing outdoor games instead of playing videos games, are all great ways to get in those extra steps.

Students tend to see each of the subjects areas in isolation. One often hears students say, "But this is gym class. We do math in math class." It is important that students learn to see the relevance of what they are learning and how it connects to other areas of their life. I use the pedometers to make those connections. For example, the Lewis and Clark trail is a popular historical trail in our area. As a class, students record the number of steps taken during the activity period and track their progress along a map. They learn history and apply mathematical concepts and skills while exercising along the trail.

1. USA Today**. "***Children's obesity now modern day epidemic.*" Retrieved March 24, 2004, from www.usatoday.com
2. "Schools and Obesity." Editorial. *The Journal Gazette*. Retrieved November 15, 2005, from http://www.fortwayne.com/mld/journalgazette/13171279.htm
3. The Robert Wood Johnson Foundation*. A Nation at Risk: Obesity in the United States*. March 2005.

2. Narrative description of how your use of technology in the classroom has impacted student performance.

The objective of the Physical Education Department at Moscow Junior High School is to encourage a healthy lifestyle that includes regular physical activity. Sedated by sedentary entertainment, such as television, computers, and video games, students spend less and less time being physically active. As physical education teachers, we encourage physical activity by introducing students to enjoyable activities based on team sports, games, and individualized fitness opportunities (such as aerobics, dance, weight lifting, jogging, and cardiovascular improvement days.) We use technology, such as pedometers, to provide evidence of the health benefits of these activities.

At MJHS, all students use the pedometers on a regular basis. Twice a week students complete a **"**fitness day**"** routine where they strive to take approximately 3,500 to 4,000 steps **(**approximately two miles**)** during the cardiovascular workout. For many students who have never covered such a distance on foot, this seems like an impossible task. As the students work through the semester and complete more fitness days, they begin to feel their bodies adapting to the demands of the cardiovascular activity. They find it easier to complete the required number of steps and experience a sense of pride and accomplishment in meeting the challenge of completing a two-mile workout. Many begin to challenge themselves to exceed their previous step count or the step count of a peer.

Today's learners are kinesthetic and visual learners. The pedometer is a valuable asset on a fitness day or during team sports and games, because it reinforces physical activity. It provides instant feedback that shows how far the student has gone and how hard he or she worked. As the teacher, I correlate their success in achieving a high step count to the benefits of what consistent physical activity can do for their health. I help them associate the number of steps taken to their *perceived* level of personal performance. Did they work hard and get their number of steps needed in for the day? If so, what helped them to be successful? If not, what can they do better next time?

The pedometers help motivate students to take personal responsibility for their physical fitness and health levels. Students can use the pedometer to determine an effective level of exercise when they participate in the activities that they most enjoy. For example, a student who hates jogging may find that rollerblading is an effective alternative. This is a valuable lifelong strategy for personal health and fitness. The use of pedometers has encouraged students to increase their participation levels in class, take more responsibility for their personal fitness, and appreciate the connectedness between classroom subjects.

3. Narrative description of how what you are proposing to purchase will enable you to use technology in an innovative manner to enhance learning opportunities for your students

Our use of pedometers has introduced students to the health benefits that physical fitness can provide. Developing informed decision makers about fitness, however, requires that students understand more about increasing the ability of the cardiovascular and respiratory systems to adapt to and recover from physical activity.

The purchase of **1:** Ninety Polar E30 Series Heart Rate Monitors, with **2:** Twenty spare transmitter straps, **3:** Lessons from the Heart manual, **4:** Eight heart monitor storage units, and **5:** Two step-by-step instructional banners will make it possible for the MJHS P.E. teachers to impact over **600 students** on a daily basis (Total cost is $7,200.00 including **6:** shipping). The heart rate monitors will provide detailed, accurate feedback about cardio-respiratory performance. With a transmitter on an elastic strap around their chests and a specialized watch/receiver on their wrists, students press one button to record, and later, recall their heartbeats per minute during periods of rest and exercise. Individuals achieve maximum health benefits when they perform aerobic exercise within their Target Fitness Zone, an intensity of 55-85% of their maximum heart rate. Teachers can use the monitor's software to program each monitor to sound a feedback "beep" as a reminder to the student to adjust their effort level if they drop below or rise above their target zone. This helps students get the maximum benefit from a workout.

Each student will maintain a P.E. Portfolio (**7:** Printing fee: $250), that includes fitness goals, his or her starting level of fitness, heart rate and step count recording sheets**,** as well as a hypothesis about how aerobic exercise will influence cardiovascular fitness. Throughout the year, students will record the distance, collected by the pedometer, and the total exercise time, collected with the stopwatch function on the heart rate monitor, to be able to compute the rate at which the student worked that day. They will also record the heart monitor data in order to compute and chart the average time spent in, above, and below their targeted training zone. The data will help answer the following questions: 1) Are students performing at the most beneficial and appropriate levels? 2) Are students making progress toward their fitness goals?

The data collection and tracking activities engage students in learning opportunities beyond those offered in the traditional physical education environment. In math, students will load their fitness data into spreadsheets and graphing calculators to see the direct benefits of their daily workouts. They will also correlate their interest and enjoyment in specific physical activities with the fitness effectiveness of those activities, thus arming them with lifelong decision-making strategies for an active, healthy lifestyle.

4. Narrative description of how what you are proposing to purchase will be used in innovative ways in the classroom.

The collection of the fitness data offers some unique and exciting applications for the physical education program. It is widely acknowledged that students who are actively engaged in activities that are relevant to their lives achieve more. There is nothing more relevant than your own data and the ability to understand your personal progress! Math teachers will show students how to use graphing calculators to enter and analyze the fitness data, identify trends, and graph their personal progress. Based on the data analysis, students will develop a more sophisticated and effective personal fitness plan. Additional math activities will verify the cardiovascular and respiratory principles they learned in physical education classes.

The teachers will place a summative data sheet in each student's P.E. Portfolio at the end of each semester. The summary data sheet provides useful information to the student and the next semester's P.E. teacher. The P.E. Portfolio will accompany the student to the High School. In addition, combining and analyzing the information on these datasheets will help identify school-wide trends, as well as progress toward our school goals.

To be effective, any efforts to influence the health and fitness lifestyles of a student need to address the whole child, including his or her family. Our Family Health & Fitness Fair has two important goals (**8:** Printing fee: $50). The first is to inform parents about their child's health education and fitness level. Students will use the data recorded in their

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P.E. Portfolios to prepare a PowerPoint presentation that documents their Personal Fitness Plan and their progress toward a healthy lifestyle. The second goal is to present information about the health-related services and activities available in the community. Local agencies and businesses are eager to participate in our Family Health & Fitness Fair to share health and career information with students and their families. Teachers will show parents how the pedometers and heart rate monitors are used in class. To encourage a family approach to fitness, teachers will present information about the 10,000 Steps-A-Day program and how to use a heart rate monitor to maintain activity in the Target Fitness Zone. This information will help families make positive, healthy lifestyle choices.

The Family Health & Fitness Fair is also an opportunity to extend the interdisciplinary connections beyond the technology devices (pedometer and heart monitor), math, history, and physical education skills and concepts to career choices. When investigating careers, students can build on their experience in the physical education classroom to explore the many options in the rapidly expanding fitness industry. In addition, students will be better informed when joining a fitness club or designing a fitness routine at home.

The middle school years present unique possibilities and challenges. Subject to peer-pressure and bombarded by the media, this is a critical time for them to learn about and establish healthy habits that ensure **Fitness for Life**. By weaving together personal fitness data with math, history**,** technology, and career information, this project helps students see the connectedness between school subjects and their lives.

Qwest Foundation for Education Grant Expenditure Plan
(Standard IFARMS Budget Format)

Activity	100 Salaries	200 Benefits	300 Contractual Agreements	400 Materials and Supplies	500 Capital Objects	**TOTAL**
1. Polar E30 Series Heart Rate Monitor (90 HRM's @ $71 each)				6,390.00		6,390.00
2. Spare HRM Transmitter straps (20 @ $6 each)				120.00		120.00
3. Lessons from the Heart Polar heart rate monitor teacher's manual				20.00		20.00
4. Monitor Storage Units (8 cases @ $70 each)				560.00		560.00
5. E30 Student Instructional Banners (Pack of 2)				60.00		60.00
6. Shipping Estimate				50.00		50.00
			Sub Total for Heart Rate Monitor → Materials:	**7,200.00**		
7. Printing fees for PE Portfolios				250.00		250.00
8. Printing fees for Family Fitness & Health Fair				50.00		50.00
TOTAL				**7,500.00**		**7,500.00**